Transdifferentiation

Transdifferentiation, also known as lineage reprogramming, is a process in which one mature somatic cell transforms into another mature somatic cell without undergoing an intermediate pluripotent state or progenitor cell type.

It is a type of metaplasia, which includes all cell fate switches, including the interconversion of stem cells. Current uses of transdifferentiation include disease modeling and drug discovery and in the future may include gene therapy and regenerative medicine.

The term 'transdifferentiation' was originally coined by Selman and Kafatos in 1974 to describe a change in cell properties as cuticle producing cells became salt-secreting cells in silk moths undergoing metamorphosis.